

Remarks

1. In view of the above amendments and the following remarks, favorable reconsideration of the outstanding office action is respectfully requested.
2. Attached hereto is a page entitled "Version of Markings to Show Changes Made."
3. Claims 1-8, and 10-16 remain in this application. Claims 1 and 10 have been amended. Claims 9, and 17-36 have been canceled.
4. **§ 102 Rejections**

The Examiner has rejected claims 1-12, 17, 19-27, and 30 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,947,550 (Fitchmun). Applicants respectfully traverse the Examiner's rejection.

The present invention as defined by pending claims 1-8, and 10-16 requires in the process of forming a silicon carbide structure the employment of compression molding.

Fitchmun neither teaches nor requires shaping of a mixture by compression molding. Fitchmun only teaches shaping by polymer injection molding. In this regard the present invention requires the formation of a powdered mixture and the shaping thereof. Therefore, since Fitchmun does not teach all the elements of the present invention, the present invention is not anticipated by Fitchmun. Accordingly, applicants respectfully request the Examiner withdraw the rejection of pending claims 1-8, and 10-12 under 35 U.S.C. § 102(b) over Fitchmun.

The Examiner further rejects claims 1-13, 15, 17, 18, 19-27, 30, 31, 32, 33, and 34 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,460,759 (Dubots). Applicants respectfully traverse the Examiner's rejection.

The present invention as defined by pending claims 1-8, and 10-16 requires the formation of a mixture of a silicon precursor powder, a cross-linking thermoset resin and a silicon-containing filler selected from powder of the group consisting of silicon carbide, silicon nitride and silicate materials.

Dubots neither teaches nor requires a silicon-containing filler selected from powder of the group consisting of silicon carbide, silicon nitride and silicate materials as part of a silicon carbide structure-forming mixtures. Therefore, since Dubots does not teach all the elements of the present invention, the present invention is not anticipated by Dubots. Accordingly, applicants respectfully request the Examiner withdraw the rejection of pending claims 1-8, and 10-12 under 35 U.S.C. § 102(b) over Dubots.

5. § 103 Rejections

The Examiner has rejected claims 1-36 under 35 U.S.C. § 103 as being unpatentable for obviousness over U.S. Patent No. 5,460,759 (Dubots). Applicants respectfully traverse the Examiner's rejection.

The Examiner asserts that Dubots teaches the basic claimed process of the present invention. As previously stated Dubots does not teach a silicon-containing filler selected from powder of the group consisting of silicon carbide, silicon nitride and silicate materials as part of a silicon carbide structure-forming mixtures. Such a component is required in the present invention, and as such Dubots does not teach all claim elements of the present invention.

To establish a prima facie case of obviousness, three requirements must be met. "First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on the applications disclosure." MPEP 2142. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Examiner states that determination of specific ingredient amounts would have obviously been selected to optimize the process conditions and/or final product and are within the realm of routine experimentation. However, since Dubots does not teach all the elements of the present invention then there can be no optimization. Further, the Examiner fails to provide any motivation or rationale for modifying the process of Dubots.

As such, the Examiner has failed to establish a prima facie case. Applicants respectfully request reconsideration of the rejection under 35 U.S.C. § 103.

6. Conclusion

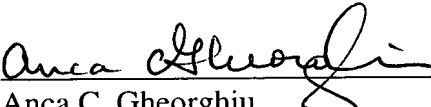
Based upon the above amendments, remarks, and papers of record, Applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests reconsideration of the pending claims 1-8, and 10-16, and a prompt Notice of Allowance thereon.

Applicant believes that no extension of time is necessary to make this Response timely. Should Applicant be in error, Applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

Respectfully submitted,

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ACG/cw


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VERSION OF MARKINGS TO SHOW CHANGES MADE

1. (Amended) A process for forming a silicon carbide structure, comprising:
forming a mixture of a silicon precursor powder, a cross-linking thermoset resin and a silicon-containing filler selected from powder of the group consisting of silicon carbide, silicon nitride and silicate materials;
~~molding by compression molding a the mixture of a silicon precursor powder and a cross linking thermoset resin to form a rigid structure;~~
carbonizing the rigid structure in an inert atmosphere at a temperature in a range from about 700 to 1000°C to convert the cross-linking thermoset resin to carbon;
and
~~forming a silicon carbide structure by heating the carbonized rigid structure at a temperature sufficient to allow carbon and silicon in the structure to react to form silicon carbide~~
heating the rigid structure in an inert atmosphere to a temperature in a range from about 1400 to 1800°C to allow the carbon to react with silicon in the rigid structure to form silicon carbide.
10. (Amended) The process of claim 91, wherein the silicon-containing filler ~~comprises one selected from the group consisting of~~ is silicon carbide, silicon nitride, and silicate materials.